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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,072	04/26/2005	Kenichi Matsumura	Q85374	6492

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7590
09/06/2007

EXAMINER	
VAJDA, PETER L	

ART UNIT	PAPER NUMBER
1756	

MAIL DATE	DELIVERY MODE
09/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/523,072		MATSUMURA ET AL.	
	Examiner		Art Unit	
	Peter L. Vajda		1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-2, 5-11, 19-20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 56-065146.

The patent document JP 56-065146 is not available as a machine translation and is awaiting full translation, at which time more claims may be rejected under 35 USC 102(b). The inventors, in the abstract, teach an electrophotographic toner wherein the binder resin is composed of a mixture of a crystalline and a non-crystalline (amorphous) polyester. Herein, the inventors teach that the crystalline polyester has a melting point within the range of 110 to 220 C and a number average molecular weight of from 8000-40,000. The non-crystalline polyester is taught to have a glass transition temperature of greater than or equal to 40 C and a number average molecular weight of from 1000 to 10,000. It is well known in the art that a number average molecular weight must be smaller than a weight average molecular weight, except in the ideal and unlikely case where they are the same. Therefore the weight average molecular weight is at least the same as the number average molecular weight. Also, since the melting point ranges are very closely similar, the amount of heat absorbed at the melting point is in

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approximately the same range as recited by the applicant. Furthermore, the inventors list that the binder contain between 50 to 95 parts by weight non-crystalline polyester and between 5 and 50 parts by weight crystalline polyester. Since the polyester resins have melting points and glass transition temperatures within the same ranges as those disclosed by the applicant, they should also inherently have the same recrystallization initiating temperatures and recrystallization peak temperatures. Since the polymers have similar properties they should have similar dispersabilities and thus similar recrystallization initiating and peak temperatures.

Regarding pending claims 7-9 of the present application, the MPEP states that, "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation." Examples of this include statements of intended use and use of the terms wherein or whereby (MPEP 2106 R-5). Furthermore, the MPEP also states that claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed (MPEP 2111.04 R-3). Therefore, pending claims 7-9, which use the optional phrase "when." do not represent limitations to the claims and are therefore rejected.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 10-11, 14-19, 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 56-065146 in view of Sato *et al.* (US PGP 2004/0185355).

The complete discussion of JP 56-065146 (henceforth JP '146) is included here. Pending a translation, it is unclear whether JP '146 teach that the composition of their polyester resins are the same as those disclosed in pending claims 12-18. Furthermore, it is also unclear whether or not JP '146 teach a haze value for their toner. These deficiencies may be remedied by the text of the specification of JP '146 after reviewing a translation.

Sato *et al.* (henceforth Sato) teach a toner composition consisting of an H form polyester, an L form polyester, and a crystalline polyester (p. 1 [0011]). According to a third aspect of the invention, Sato teaches the use of an amorphous polyester resin with a crystalline resin (p. 2 [0012]). Sato further teaches that the polyester resins may also be polyester/polyamide resins, or polyamide resins (p. 2 [0019]). The polyester resins are taught to be made from monomers listed as ethylene glycol, neopentyl glycol, 1, 4 butanediol, and terephthalic acid (p. 2 [0022] and [0027]). Specifically preferred monomers are taught to be ethylene glycol and terephthalic acid (p. 2 [0023] and [0028], respectively). The crystalline polyester resin is also taught to be made from the

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same monomers, namely terephthalic acid (p. 4 [0043]), ethylene glycol, 1,4-butanediol, and neopentyl glycol (p. 4 [0044]). The aforementioned H form polymer is taught to be a higher molecular weight resin with a number average molecular weight ranging from 4000 to 20,000 and the L form polymer is taught to be a low molecular weight resin having a number average molecular weight of from 5000 to 10,000 (p. 4 [0049]). Thus, the inventors teach a non-crystalline polyester with a weight average molecular weight between 3,000 and 20,000 and, since number average molecular weight must be smaller than weight average molecular weight, a non-crystalline polyester having a weight average molecular weight between 20,000 and 300,000. The ratio of H form:L form is taught to be from 2-5:5-8 and the crystalline polyester is said to be confined within the range of 1 to 30 parts by weight based on 100 parts by weight of the mixture of H form and L form polyester resin (p. 4-5 [0052-53]). The toner may also contain a wax (p. 6 [0064]). Sato also teaches a haze value for the toners and lists said haze values in tables 1-2. The haze values for many toners are high and are not listed as a percent. Sato also describes the haze value measurement as being performed by a direct-reading type haze computer. Therefore, the examiner maintains that the haze values disclosed by Sato are the same as those disclosed by the applicant in pending claim 4. Sato also teaches that the mixing of these resins results in a toner with a longer shelf life, better environmental stability, improved low temperature fixability and hot offset resistance, and an improvement in the electrification degree of the resin (p. 4 [0052]).

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Therefore, in light of these two inventions, it would have been obvious to any person of ordinary skill in the art at the time of the invention to have constructed the toner of JP 56-065146 with high melting points resins that were made using the resins of Sato *et al.* This would have resulted in a toner with a longer shelf life, better environmental stability, improved low temperature fixability and hot offset resistance, and an improvement in the electrification degree. Therefore, the toner of JP '146 would have been greatly improved by the use of the resins Sato.

Claims 1, 12-13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 56-065146 in view of Emura *et al.* (US PGP 2003/0008225).

The complete discussion of JP 56-065146 (henceforth JP '146) is included here. Pending a translation, it is unclear whether JP '146 teach that the composition of their polyester resins are the same as those disclosed in pending claims 12-18. Furthermore, it is also unclear whether or not JP '146 teach a haze value for their toner. These deficiencies may be remedied by the text of the specification of JP '146 after reviewing a translation.

Emura *et al.* teach a toner comprised of a binder resin and a colorant. Said binder resin is comprised of two polyesters, one linear and one crosslinked. Furthermore, said polyesters are taught to be recycled polyethylene terephthalate and/or polybutylene terephthalate (p. 6 [0066] and p. 8 [0090]). Said resins are also taught to have a acid number for from 0 to 70 KOH mg/g (p. 8 [0090]). Emura *et al.* stress the importance of using these polymers since they are easily available as recycled resins.

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The use of these resins results in a reduction of energy expenditure and in a conservation of resources.

Therefore, in light of these two inventions, it would have been obvious to any person of ordinary skill in the art at the time of the invention to have used the resins of Emura *et al.* as the high melting point polyesters in the toner of JP 56-065146. This would have reduced the need to make more resins and would have conserved resources and energy and thus resulted in a cheaper production that was also environmentally friendly.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tanaka *et al.* (US 4797340), Tanka *et al.* (US 4385107), Tavernier *et al.* (US PGP 2003/01860645).

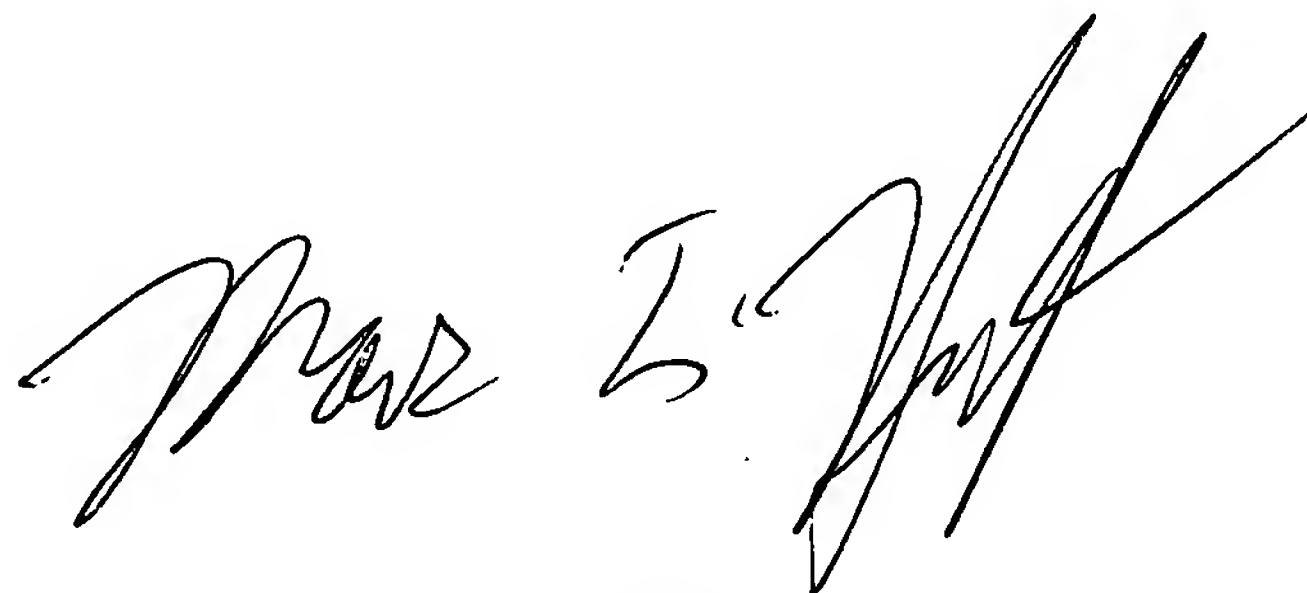
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter L. Vajda whose telephone number is 571-272-7150. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PLV/ 08/30/2007

A handwritten signature in black ink, appearing to read "Mark E. Huff", is written over a rectangular stamp.

MARK E. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :05/22/2007, 08/25/2005, 01/25/2005.

(no 1449
provided
by Applicant)